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ABSTRACT

Methods for assaying a sample for a probe polynucleotide are provided. The methods comprise forming a complex between a target on a substrate, the probe polynucleotide that binds to the target, and a conjugate comprising a semiconductor nanocrystal that binds to the probe polynucleotide by way of a tag sequence on the probe polynucleotide. The complex is formed when the probe polynucleotide is present in the sample. The methods are useful in any technique in which the detection of a target that can bind to a probe polynucleotide is desired, for example in fluorescence in situ hybridization. The methods are particularly useful in multiplex settings such as hybridization to microarrays where a plurality of targets are present. Assay complexes produced by such methods and kits useful for performing such methods are also provided.